

What is claimed is:

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A polymer blend comprising:

- I. from about 80 to about 99.5 weight % of a semi-crystalline polyester, which comprises the residues of
 - (A) a dicarboxylic acid component comprising repeat units from at least about 85 mole % of terephthalic acid, naphthalene-2,6-dicarboxylic acid or a mixture thereof; and
 - (B) a glycol component comprising repeat units from at least about 85 mole % ethylene glycol, based on 100 mole % dicarboxylic acid and 100 mole % glycol; and
 - II. from about 20 to greater than about 2 weight % of a low molecular weight polyamide, having a number average molecular weight of less than about 15,000, having the repeating unit A-D, wherein A is the residue of a dicarboxylic acid comprising adipic acid, isophthalic acid, terephthalic acid, 1,4-cyclohexanedicarboxylic, resorcinol dicarboxylic acid, or naphthalenedicarboxylic acid, or a mixture thereof, and D is a residue of a diamine comprising *m*-xylylene diamine, *p*-xylylene diamine, hexamethylene diamine, ethylene diamine, or 1,4-cyclohexanedimethylamine, or a mixture thereof.
2. The polymer blend of claim 1, wherein the dicarboxylic acid comprises terephthalic acid.

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3. The polymer blend of claim 1, wherein the dicarboxylic acid comprises naphthalenedicarboxylic acid.
4. The polymer blend of claim 1, wherein the dicarboxylic acid component is modified with up to about 20 mole % of phthalic acid, cyclohexanedicarboxylic acid, cyclohexanediacetic acid, diphenyl-4,4'-dicarboxylic acid, succinic acid, glutaric acid, adipic acid, azelaic acid, sebacic acid or a mixture thereof.
5. The polymer blend of claim 1, wherein the glycol component is modified with up to about 6 mole % of diethylene glycol, triethylene glycol, 1,4-cyclohexanedimethanol, neopentyl glycol, 1-3-propane diol, 1,4-butane diol, 1,5-pentane diol, 1,6-hexane diol, 3-methylpentanediol-(2,4), 2-methylpentanediol (1,4), 2,2,4-trimethylpentane-diol-(1,3), 2-ethylhexanediol-(1,3), 2,2-diethylpropane-diol (1,3), hexanediol-(1,3), 1, 4-di-(hydroxyethoxy)-benzene, 2,2-bis-(4-hydroxycyclohexyl)-propane, 2,4-dihydroxy-1,1,3,3-tetramethylcyclobutane, 2,2-bis-(3-hydroxyethoxyphenyl)-propane, 2,2-bis (4 hydroxypropoxyphenyl)-propane or a mixture thereof.
6. The polymer blend of claim 1, wherein the molecular weight of the polyamide is less than about 12,000.
7. The polymer blend of claim 1, wherein in the repeating unit **A-D**, A comprises adipic acid and D comprises *m*-xylylene diamine.
8. The polymer blend of claim 1, wherein the blend further comprises a multifunctional polyol comprising trimethylolpropane, pentaerythritol or glycerol.

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9. The polymer blend of claim 1, wherein the polyester has an inherent viscosity of from about 0.05 to about 1.0 dL/g as measured in a mixture of 60 weight percent phenol and 40 weight percent 1,1,2,2-tetrachloroethane at a concentration of 0.5 g/100ml solvent at 25°C.
10. The polymer blend of claim 1, wherein the polyamide has an inherent viscosity of less than about 1.0 dL/g as measured in a mixture of 60 weight percent phenol and 40 weight percent 1,1,2,2-tetrachloroethane at a concentration of 0.5 g/100ml solvent at 25°C.

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11. The polymer blend of claim 1, wherein the low molecular weight polyamide is from about 20 to greater than 2 weight %.

12. An article comprising the polymer blend of claim 1.

13. The article of claim 12, wherein the article is a bottle, sheet, film, tubing, profile, preform, fiber, container or tray.

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14. A method for reducing gas permeability of polyester comprising blending:

- I. from about 80 to about 99.5 weight % of a semi-crystalline polyester, which comprises the residues of:
- (A) a dicarboxylic acid component comprising repeat units from at least about 85 mole % of terephthalic acid, naphthalene-2,6-dicarboxylic acid or a mixture thereof; and
- (B) a glycol component comprising repeat units from at least about 85 mole% ethylene glycol, based on 100 mole % dicarboxylic acid and 100 mole % of glycol; and

II. from about 20 to greater than about 2 weight % of a low molecular weight polyamide having a number average molecular weight of less than about 15,000 having the repeating unit **A-D**, wherein **A** is the residue of a dicarboxylic acid comprising adipic acid, isophthalic acid, terephthalic acid, 1,4-cyclohexanedicarboxylic, resorcinol dicarboxylic acid, or naphthalenedicarboxylic acid, or a mixture thereof, and **D** is the residue of a diamine comprising *m*-xylylene diamine, *p*-xylylene diamine, hexamethylene diamine, ethylene diamine, or 1,4-cyclohexanedimethylamine, or a mixture thereof.

15. The method of claim 14, wherein the low molecular weight polyamide is from about 20 to greater than 2 weight %.

^{Sub}_{A4} 16. An article made from the polyester blend produced by the method of claim 14.

¹³₁₁ 17. The article of claim ¹²₁₀, wherein the article is a bottle, sheet, film, tubing, profile, preform, fiber, container or tray.

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